
From: Stephen Pauley [mailto:spauley2@cox.net]

Sent: Friday, July 31, 2009 1:29 PM

To: SSL

Subject: Efficient, healthy outdoor lighting

(with attachment)

Sirs

The proposed energy efficiency measures for outdoor lighting are a surrender to the lighting industry which is reluctant to change its fixtures to eliminate light pollution (glare, sky glow, light trespass, and energy waste). The industry has also ignored the body of research which convincingly links exposure to the human eye to light at night, melatonin suppression, and breast cancer (see below and attached .doc file).

Using BUG and FTE only complicates the issue and will confound local town officials when they seek to move toward energy efficient and low impact (healthy) outdoor lighting. BUG and FTE will ensure full employment for lighting engineers who will try to explain these concepts to local planning boards. Is the DOE interested in energy efficient lighting or further complicating lighting concepts for turf protection by lighting engineers?.

If engineers can re-set their thinking to move away from uniformity- the irrational mind set that says every inch of pavement between fixtures must be flooded with photons - we'd be there. Allowing any light to shine above 90 degrees from the base of a level lamp is adding to energy waste, glare, and sky glow

Human Health Issues

The human retina has 20 times the number of rods than cones. We have evolved to see well in low light situations. Our scotopic vision (rods) works well, but only if not insulted by glare.

We now know that a 3rd light sensing mechanism exists in the retina which senses blue light, regulates our biological clocks to a day-night rhythm, and regulates the secretion of melatonin from the pineal gland. Since melatonin is a cancer inhibiting hormone, we must not interfere with its production between 2 and 4 AM. Unshielded street lighting will do that. Therefore proper outdoor lighting should be considered

a PUBLIC HEALTH ISSUE. The AMA recognized this at their 2009 convention and recommends fully shielded lights.

Graveyard shift workers have higher incidences of breast and colorectal cancers. In response to this in 2007, the World Health Organization listed shift work as a "probable carcinogen".

Solution: Simply keep the existing IESNA cutoff classifications and recommend full cutoff fixtures for all outdoor lighting. With less wasted light through the use of well targeted light, one may use lower wattage lamps = energy savings. This is the KISS principle. It's understood by all, is easily implemented, and protects the public's health by eliminating light trespass into bedrooms.

Sincerely
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